



Australian Government
Bureau of Meteorology

Tropical Cyclone Kay

11 - 17 April 1987

Darwin and Perth Tropical Cyclone Warning Centres
Bureau of Meteorology

A. Summary

A low that developed near PNG moved to the west southwest and briefly reached cyclone intensity on 9 April prior to weakening and passing over the Cobourg Peninsula, Bathurst Island and Melville Island north of Darwin the following day. The low subsequently re-intensified reaching category two intensity on 12 April, peaking the following day before weakening as it continued on its general west southwest track over open waters. *Kay* finally weakened below cyclone intensity on 16 April.

A newspaper article (The Australian, 21 April 1987) reported that two Indonesian fishing vessels had capsized in wild seas off Scott Reef with the loss of 16 lives. This tragedy was reported to Australian authorities by the five survivors several days after the event.

B. Meteorological Description

Tropical cyclone *Kay* began as a weak depression in the Gulf of Papua on 5 April. For the next four days the depression moved slowly in a west-southwesterly direction, gradually intensified, and was named at 0600 UTC 9 April.

Kay continued in a west southwesterly direction into an area of strong middle and upper-level easterly flow. At 0000 UTC 10 April satellite imagery indicated that the upper-level cloud had sheared away from the low-level circulation. While the upper cloud moved rapidly to the southwest, the low-level circulation moved westward across the Cobourg Peninsula, Bathurst Island and Melville Island to the north of Darwin. The low-level circulation was clearly evident on satellite imagery to the west of Bathurst Island at 1800 UTC 10 April but through the shearing mechanism and the passage over the islands to the north of Darwin, *Kay* had weakened considerably and the central pressure was estimated at only 1002 hPa.

Throughout the next 6 to 12 hours the depression underwent massive reorganisation and intensification. The reorganisation could have been due to development from the middle-level circulation (located to the southwest of the low-level circulation following shearing) in which case a new system centre

was formed, or alternatively, rapid realignment occurred between the existing low-level circulation and the middle-levels. Complex satellite imagery and a sparse surface network, made an accurate positioning of the system very difficult during this period. However, a reorganised *Kay* passed south of the drilling platform near 11.5°S, 129°E at about 1800 UTC 11 April with an estimated central pressure of 992 hPa. The cyclone continued to intensify and moved into the Western region near 13.1°S, 124.9°E at 0000 UTC 12 April as a fully developed cyclone.

Kay maintained a basic west southwesterly course, though the passage of weak frontal systems to the south caused minor variations in the track. The cyclone intensified to reach its lowest pressure of 976 hPa by 1800 UTC 12 April at 13.7°S, 121.8°E. This intensity was maintained for 24 hours before the system began to weaken. By 0000 UTC 16 April at 16.8°S, 110.8°E the estimated central pressure had risen to 994 hPa and the system was no longer considered to be producing gale force winds. The resulting low was absorbed into a broad maritime trough in the vicinity of 19.0°S, 107.5°E at 0000 UTC 17 April.

The strongest wind reported was 121 km/h from the northwest, reported by a ship 160 km to the north of the centre when the cyclone was at 13.6°S, 122.8°E (1200 UTC 12 April). As this wind strength exceeds the Dvorak-derived estimate of the strongest winds near the centre at the time, monsoonal north westerlies are assumed to have contributed the excess.

C. Impact

A newspaper article (The Australian, 21 April 1987) reported that two Indonesian fishing vessels had capsized in wild seas off Scott Reef during 16 April with the loss of 16 lives. This tragedy was reported to Australian authorities by the five survivors several days after the event

The cyclone was entirely maritime and did not cause winds exceeding gale force in coastal areas.

D. Observations

Wind/Pressure

Ship observations near the centre reported 50 knot winds and a pressure of 996 hPa at 0900 UTC 9 April.

Table 1 Best track summary for Tropical Cyclone *Kay*, 11 – 17 April 1987

Note: Add 8 hours to convert to WST. Refer to best track database for complete track details.

Year	Month	Day	Hour (UTC)	Position Latitude S	Position Longitude E	Max wind 10min knots	Central Pressure hPa	Rad. of Gales nm
1987	04	08	0000	8.5	140.1			
1987	04	08	0600	8.8	139.4			
1987	04	08	1200	8.9	138.0			
1987	04	08	1800	9.3	136.6			
1987	04	09	0000	9.8	136.2			
1987	04	09	0600	10.1	135.6			
1987	04	09	1200	10.3	134.6			
1987	04	09	1800	10.7	133.9			
1987	04	10	0000	11.2	133.2			
1987	04	10	0300	11.5	131.3			
1987	04	10	0600	12.0	130.7			
1987	04	10	1200	11.8	130.4			
1987	04	10	1800	11.5	130.0			
1987	04	11	0000	11.2	129.0			
1987	04	11	0600	11.9	128.0			
1987	04	11	1200	12.2	127.0			
1987	04	11	1800	12.4	125.7	40	992	
1987	04	12	0000	13.1	124.9	45	988	
1987	04	12	0600	13.5	124.0	50	984	30
1987	04	12	1200	13.6	122.8	55	980	
1987	04	12	1800	13.7	121.8	60	976	45
1987	04	13	0000	14.8	121.2	60	976	50
1987	04	13	0600	14.6	120.2	60	976	
1987	04	13	1200	14.4	119.6	60	976	
1987	04	13	1800	14.3	118.9	60	976	
1987	04	14	0000	14.2	118.2	50	982	120
1987	04	14	0600	14.5	117.6	45	988	
1987	04	14	1200	15.0	116.8	40	992	
1987	04	14	1800	14.9	115.9	35	994	
1987	04	15	0000	14.6	115.0	35	994	
1987	04	15	0600	14.6	113.9	35	994	
1987	04	15	1200	15.0	112.7	35	994	
1987	04	15	1800	15.7	111.5	35	994	
1987	04	16	0000	16.8	110.8	35	994	
1987	04	16	0600	17.7	110.4	35	995	
1987	04	16	1200	18.3	109.7	30	997	
1987	04	16	1800	18.8	108.8	30	999	
1987	04	17	0000	19.0	107.5	25	1002	

Figure 1. Track of Tropical Cyclone *Kay*, 11 – 17 April 1987.
All times in WST.

